

REMARKS

In the Final Office Action of December 9, 2009, claims 1, 10, 11 and 53 are rejected under 35 U.S.C. § 102(a) as being anticipated by Li et al., *Electrospinning of Polymeric and Ceramic Nanofibers as Uniaxially Aligned Arrays* (hereinafter: "Li"). Claims 1, 10 and 53 are rejected under 35 U.S.C. § 102(b) as being anticipated by Deitzel et al., *Controlled deposition of electrospun poly(ethylene oxide) fibers* (hereinafter: "Dietzel"). Claims 1, 10 and 53 are rejected under 35 U.S.C. § 102(b) as being anticipated by Theron et al., *Electrostatic field-assisted alignment of electrospun nanofibers* (hereinafter: "Theron"). The remaining rejections in the Final Office Action of the claims pending in the application and not withdrawn from consideration are under 35 U.S.C. § 103(a). The claims rejected under 35 U.S.C. § 103(a) are dependent, directly or indirectly, on claim 1 and each of the 35 U.S.C. § 103(a) rejections relies on Li, Dietzel or Theron as the primary reference.

The rejections in the Final Office Action are not proper for the reasons explained below.

First, regarding Li, Li has an effective date as a reference of July 8, 2008. This date is subsequent to the filing dates of

Japanese Patent Application Nos. 2002-308048 and 2002-315726, the priority of which is claimed in the present application under 35 U.S.C. § 119.

In order to perfect the claim to priority under 35 U.S.C. § 119 and remove Li as a reference against the claims of the present application, applicants are submitting herewith an English translation of Japanese Patent Application No. 2002-308048 and a statement that the translation is accurate and an English translation of Japanese Patent Application No. 2002-315726 and a statement that the translation is accurate.

Regarding Dietzel and Theron, each of these references is insufficient to support anticipation under 35 U.S.C. § 102 and obviousness under 35 U.S.C. § 103(a) of claim 1 of the application for the reasons explained below.

First, the Office states in Paragraph 5 of the Final Office Action that "according to the instant specification single fibers in a range from 1×10^{-7} to 2×10^{-4} dtex in single fiber fineness are equivalent to single fiber diameter from 1 to 150 nm. (See [0122])." The Office further states that the single fiber diameter of Deitzel overlaps that of the single fiber diameter range as claimed.

However, claim 1 requires that in the aggregate of nanofibers

of the invention, "60%, in fineness ratio, or more of single fibers are in a range from 1×10^{-7} to 2×10^{-4} dtex in single fiber fineness". That is, nanofibers of the present invention have a small fiber fineness by number average and a small spread of single fiber fineness. As shown on page 8168, Fig. 8 (b) of Deitzel, nanofibers of Deitzel have a large spread of single fiber fineness and fall out of the claimed range of "60%, in fineness ratio, or more of single fibers are in a range from 1×10^{-7} to 2×10^{-4} dtex in single fiber fineness", even if the range of fiber fineness may partially overlap.

The same argument with respect to Dietzel can be applied to Theron. Although not indicated quantitatively, according to Fig. 2 of Theron, nanofibers of Theron have a large spread of single fiber fineness. Also in Fig. 6 of Theron, it is described that: "[i]n (a), the diameter of the fibers varies from 100 to 300 nm" and "[i]n (b), the diameter of the fibers varies from 200 to 400 nm". These diameters also fall out of the claimed range of "60%, in fineness ratio, or more of single fibers are in a range from 1×10^{-7} to 2×10^{-4} dtex in single fiber fineness", even if the range of fiber fineness may partially overlap.

Moreover, it is noted that each of the cited references

discloses an electrospinning method. As described on page 2, line 25, to page 3, line 13, of the present specification (paragraph [0009] of the publication, US 2006/0057350, of the present application), the prior art, e.g., *Polymer*, Vol. 40, 4585 (1999), and (*Polymer*, Vol. 43, 4403 (2002)), teaches that an electrospinning method may produce yarns having small single fiber fineness but the yarns have a large spread of single fiber fineness. Therefore, the prior art supports a conclusion that the methods of Dietzel and Theron do not produce an aggregate of nanofibers having a small fiber fineness by number average and a small spread of single fiber fineness as required by the claims of the present application.

The disclosure of each of Theron and Dietzel, when considered in light of the teachings in the prior art that an electrospinning method produce yarns having a large spread of single fiber fineness, is insufficient to support anticipation of claim 1 and the claims dependent thereon under 35 U.S.C. § 102. Anticipation of a claim under 35 U.S.C. §102 requires the disclosure in a single prior art reference of every limitation of the claimed invention, either explicitly or inherently. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). The claim limitation or limitations must necessarily be included in the prior art

reference in order for the reference to anticipate. Inherency may not be established by possibilities or probabilities. The fact that a limitation might result from the disclosure of a reference is not sufficient. In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) and In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986).

The propriety of the 35 U.S.C. § 103(a) rejections depends on the sufficiency of Dietzel and Theron to support anticipation of claim 1 under 35 U.S.C. § 102. Since Dietzel and Theron do not support anticipation of claim 1 under 35 U.S.C. § 102, they cannot support a case of *prima facie* obviousness of the dependent claims under 35 U.S.C. § 103(a).

Removal of the 35 U.S.C. § 102 and 35 U.S.C. § 103(a) rejections and a notice of allowability of the claims of the application are believed to be in order and are respectfully requested.

The foregoing is believed to be a complete and proper response to the Office Action dated December 9, 2009.

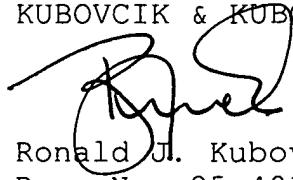
In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to Deposit Account No. 111833.

PATENT APPLN. NO. 10/532,082
RESPONSE UNDER 37 C.F.R. § 1.116

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In the event any additional fees are required, please also charge Deposit Account No. 111833.

Respectfully submitted,
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Attachments: English translation of Japanese Patent Application No. 2002-308048 and a statement that the translation is accurate and an English translation of Japanese Patent Application No. 2002-315726 and a statement that the translation is accurate